



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/693,027	10/20/2000	Gregory M. Callis	5577-215	8047

20792 7590 09/11/2003

MYERS BIGEL SIBLEY & SAJOVEC
PO BOX 37428
RALEIGH, NC 27627

EXAMINER

TRAN, LAMBERT L

ART UNIT	PAPER NUMBER
----------	--------------

2142

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/693,027

Applicant(s)

CALLIS ET AL.

Examiner

Lambert L. Tran

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 20 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4-5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Action is in response to the application filed on 20 October 2000.

Priority

2. No claim for priority has been made in this application.

Information Disclosure Statement

3. The information disclosure statements (IDS) submitted on 20 October 2000 (paper #4), and 26 March 2001 (paper #5) have been considered by the Examiner (see attached PTO 1449's).

Specification

4. Applicant is reminded of the proper content of the "Brief Summary of the Invention" of the disclosure. See section (f) below for guideline.

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic

Art Unit: 2142

documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.

- (e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
- (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the

art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (k) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

5. The Brief Summary of the Invention in the disclosure is very much like the claimed invention in the claim section. It is not directed toward the invention rather than the disclosure as a whole [see section (f) above], nor does it point out any advantages of the invention. The Examiner suggests Applicant to rewrite this section to be in conformant to MPEP § 608.01(d).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2142

7. Claim 10, 20, 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 10, 20, 30 recite the limitation "*the steps of defining, receiving, determining and distributing are carried out by a **routing communication protocol stack***". The protocol stack is a set of network protocol layers that work together to enable network communication. However, the claimed routing communication protocol stack is indefinite. It is unclear whether this stack refers to the OSI Reference Model of seven protocol layers with routing communication software. It is unclear whether the routing communication is incorporated in a particular layer of the OSI Reference Model. Furthermore, it is unclear how this network protocol layers can be used to "*define a subset of the plurality of data processing systems*".

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-2, 4-6, 8, 11-12, 14-16, 18, 21-22, 24-26 and 28 are rejected under 35

U.S.C. 102(b) as being anticipated by Gehr et al., U.S. Patent No 5,828,847, hereinafter referred to as Gehr.

11. In regard to claim 1, Gehr disclosed a dynamic server switching for maximum server availability and load balancing system that:

Art Unit: 2142

defining a subset of the plurality of data processing systems (servers) which are to receive connection requests to the application having at least one predefined characteristic; see Gehr, col. 2, lines 50-61. The subset of servers in Gehr's invention is maintained in "a list which identified primary servers" [see Gehr, col. 2, lines 57-60]. The predefined characteristic in Gehr's invention is called "the preferred communication method" [see Gehr, col. 2, lines 57-60]. receiving a request for a connection to the application over the network; [see Gehr, col. 2, lines 65-66]

determining if the request has a characteristic corresponding to the at least one predefined characteristic associated with the subset of the plurality of data processing systems [see Gehr, col. 2, lines 50-61]; lines 50-61];

and

distributing the request to one of the subset of the plurality of data processing systems if the request has a characteristic corresponding to the at least one predefined characteristic [see Gehr, col. 2, lines 50-61, lines 65-66].

12. In regard to claim 2, Gehr further disclosed a method for:

distributing the request to a data processing system of the plurality of data processing systems other than a data processing system in the subset of data processing systems if the request does not have a characteristic corresponding to the at least one predefined characteristic [see Gehr, col. 2, lines 30-35, lines 61-67].

13. In regard to claim 4, Gehr disclosed a method for determining *the availability of data processing systems meets the availability criteria* using the "Client Communication Interface" process, this data is either created manually by system administrator or by "a neuromorphic

Art Unit: 2142

processing element” [see Gehr, col. 5, lines 61-67, col. 6, lines 1-15]. The “Client Communication Interface” process also contains and uses *a predefined characteristic* (an associated communication method) for distributing matching requests [see Gehr, col. 6, lines 16-28].

14. In regard to claim 5, Gehr disclosed *distributing the request to a data processing system of the plurality of data processing systems other than a data processing system in the subset of data processing systems* [see Gehr, col. 6, lines 29-45].

15. In regard to claim 6, Gehr disclosed *the step of rejecting (response to a failure) the request if the request has a characteristic corresponding to the at least one predefined characteristic of the subset* [see Gehr, col. 6, lines 29-45].

16. In regard to claim 8, Gehr disclosed the step of defining a subset of the plurality of data processing systems comprises the step of including in the subset of the plurality of data processing systems, data processing systems having common operational characteristics [see Gehr, col. 5, lines 38-61].

17. In regard to claims 11-12, 14-16, 18, 21-22, 24-26 and 28, these claims describe a system and a computer program that presented in claims 1-2, 4-5, 8. They are rejected by the same rationale.

18. Claims 1, 11 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Choquier et al., U.S. Patent No 5,951,694, hereinafter referred to as Choquier.

19. In regard to claim 1, Choquier disclosed *a method of distributing workload between a plurality of data processing systems (servers) in a cluster of data processing systems, wherein*

Art Unit: 2142

each of the plurality of data processing systems is executing an instance of an application which communicates over a network such that a connection request to the application may be distributed to any one of the plurality of data processing systems [see Choquier, col. 1, lines 45-65], the method comprising:

defining a subset of the plurality of data processing systems [arrange into group] which are to receive connection requests to the application having at least one predefined characteristic; [see Choquier, col. 2, lines 1-4]

receiving a request for a connection to the application over the network; [see Choquier, col. 2, lines 48-57]

determining if the request has a characteristic corresponding to the at least one predefined characteristic associated with the subset of the plurality of data processing systems; [see Choquier, col. 2, lines 48-57] and

distributing (pass) the request to one of the subset of the plurality of data processing systems if the request has a characteristic corresponding to the at least one predefined characteristic [see Choquier, col. 2, lines 48-57].

20. In regard to claims 11 and 21, these claims describe a system and a computer program that presented in claims 1. They are rejected by the same rationale.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2142

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 3, 4, 7, 13, 14, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gehr, in view of Masters, U.S. Patent No 6,374,300.

23. In regard to claim 3, Gehr disclosed the invention substantially as claimed. However, Gehr did not specifically disclose the use of *client identification associated with the request*. In the same field of managing load balancing, Masters disclosed a method for encoding a unique client identification associated with the request [see Masters, col. 2, lines 24-58, col. 15, lines 58-62]. An ordinary artisan in the art at the same time the invention was made, would have been motivated to look to a way to provide an effective method for persistently mapping a client's relationship to the server that handles the request [see Masters, col. 2, lines 8-11].

24. Accordingly, it would have been obvious to one of ordinary skill in the client-server art at the time the invention was made to have incorporated Masters' teachings of using client identification associated with the request [see Masters, col. 2, lines 24-58, col. 15, lines 58-62] with the teachings of Gehr in managing load balance for the purpose of providing a system which ensures maximum availability of adequate server resources to process client requests [see Gehr, col. 1, lines 18-19].

25. In regard to claims 4 and 7, Masters disclosed *a method determining the availability, distributing the request, and distributing the request to the best availability* [see Masters, col. 7, lines 54-61].

26. In regard to claims 13, 14, 17, 23, 24 and 27, these claims describe a system and a computer program that presented in claims 3, 4, and 7. They are rejected by the same rationale.

Art Unit: 2142

27. Claims 9, 19 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gehr, in view of Masters, and further in view of would have been obvious to one of ordinary skill in the art at the time the invention was made.

28. In regard to claim 9, the combination of Gehr and Masters disclosed a system and associated method for distributing client request and balancing load using either a Client Communication Interface (see Gehr, col. 5, lines 38-61) or a Server Array Controller (see Masters, col. 7, lines 50-61). The distributing client request and balancing load techniques disclosed in the invention *define a subset of data processing systems (servers)* (through the list in the Client Communication Interface, see Gehr, col. 2, lines 50-61), *receiving a request for connection to the application over the network, determining the characteristics corresponding to the predefined characteristic, and distributing the request to the server* [see Gehr, inter alia, col. 4, lines 5-11, Masters, inter alia, col. 10, lines 1-19].

While the combination of Gehr and Masters disclosed the invention substantially as claimed, Gehr- Masters did not expressly disclose *wherein the data processing systems comprise communication protocol stacks bound to the application in an OS/390 Sysplex and wherein the subset of the plurality of data processing systems comprise a subset of the communication protocol stacks bound to the application*. The IBM OS/390 Sysplex is a well-known cluster system. This architecture consists of a set of computers that are clustered via a hardware entity called a "coupling facility" attached to each CPU. Examiner takes Official Notice (see MPEP § 2144.03) that the IBM OS/390 Sysplex was well known in the art at the time the invention was made. Additionally, see Zalewski et al., U.S. Patent No 6,542,926, col. 3, lines 13-25 enclosed. The Applicant is entitled to traverse any/all official notice taken in this action according to

MPEP § 2144.03. However, MPEP § 2144.03 further states "See also *In re Boon*, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice)." Specifically, *In re Boon*, 169 USPQ 231, 234 states "as we held in *Ahlert*, an applicant must be given the opportunity to challenge either the correctness of the fact asserted or the notoriety or repute of the reference cited in support of the assertion. We did not mean to imply by this statement that a bald challenge, with nothing more, would be all that was needed". Further note that 37 CFR § 1.671(c)(3) states "Judicial notice means official notice". Thus, a traversal by the Applicant that is merely "a bald challenge, with nothing more" will be given very little weight. The operating environment of the IBM OS/390 Sysplex permitted the communication protocol stacks bound to application such as the one used in Gehr-Masters invention. An ordinary artisan in the art at the same time the invention was made, would have been motivated to look to a way to improve client-server throughput since client-server throughput is a major performance issues.

29. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention is made to apply the load balancing techniques disclosed in Gehr- Masters' teachings to the IBM OS/390 Sysplex for the purpose of providing an overall system which is responsive to client request and limiting server idle time.

30. By the rationale set forth above, claim 9 is rejected.

31. In regard to claims 19 and 29, these claims describe a system and a computer program that presented in claim 9. They are rejected by the same rationale.

Art Unit: 2142

32. Claims 10, 20, and 30, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Gehr, in view of Masters, and further in view of Aiken et al., U.S. Patent No 6,430,622, hereinafter referred to as Aiken.

33. Claim 10, as understood, cites *wherein the steps of defining, receiving, determining and distributing are carried out by a routing communication protocol stack*. While the combination of Gehr and Masters disclosed the invention substantially as claimed, Gehr- Masters did not expressly disclose the steps to carry out the load balancing techniques in a (routing) *communication protocol stack*. In the same field of network cluster art, Aiken disclosed in IBM OS/390 Sysplex architecture, the Dynamic Name Server (DNS) and the Work Load Manager (WLM) is implemented in the communication protocol stack. The DNS/WLM considers relative workloads among the nodes supporting the requested application, and will return the IP address for the most appropriate available server [see Aiken, col. 2, lines 4-8]. An ordinary artisan in the art at the same time the invention was made, would have been motivated to look to a way to implement (carry out) the load balancing techniques taught by Gehr and Masters in the communication protocol stack of IBM OS/390, since it is where the DNS/WLM handling all the workload of the cluster in this architecture.

34. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention is made to implement the load balancing techniques disclosed in Gehr- Masters' teachings in the communication protocol stack of IBM OS/390 Sysplex as disclosed by Aiken, since it is a logical and seamless area for managing workload in this architecture, and because logical and seamless are the most common design goals when one wants to improve an existing architecture.

Art Unit: 2142

35. In regard to claims 20 and 30, these claims describe a system and a computer program that presented in claim 10. They are rejected by the same rationale.

Conclusion

36. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. O'Neil et al., U.S. Patent No 6,128,279, disclosed system for balancing loads among network servers.
- b. Watabe et al., U.S. Patent No 5,796,936, disclosed distributed control system in which individual controllers executed by sharing loads.
- c. Yamane et al., U.S. Patent No 6,317,786, disclosed web service.
- d. Modi et al., U.S. Patent No 6,587,866, disclosed method for distributing packets to server nodes using network client.
- e. MacLellan et al., U.S. Patent No 6,591,262, disclosed collaborative workload management.
- f. Schmuck et al., U.S. Patent No 5,946,686, disclosed parallel file system and method with quota allocation.

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lambert L. Tran whose telephone number is (703) 305-4663.

The examiner can normally be reached on normal workdays from 9AM - 5PM.

Art Unit: 2142

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Powell can be reached on (703) 305-9703. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9700.

L.L.T
Assistant Examiner
GAU 2142
September 3, 2003

MARC THOMPSON
Marc Thompson
Primary Examiner
(703) 308-6750